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ABSTRACT

This illustrated guide for designing and building children's playgrounds opens with a definition of "play space" as a joyful, safe, healthy environment which builds strong bodies and develops emotional stability. Section 1, "Why Play Spaces Are Needed," includes some observations about children's developmental needs and how those needs are being challenged by current social and economical changes. Section 2, "How Can Play Spaces Help Children Learn?" illustrates characteristics of growth-producing play space. Section 3, "General Criteria for Play Spaces," discusses location, safety and children's anticipated behavior. Section 4, "Design Ideas for Play Spaces," gives advice for storage and ground surfaces. Section 5, "General Criteria for Play Equipment," draws implications for the design of play equipment based on (Korean and Japanese) children's heights. Section 6, "Design Ideas For Play Equipment," is based on the use of common materials. This section also offers several pages of ideas for fixed and moveable equipment, along with some safety advice, and includes numerous detailed drawings and measurements (using the metric system) of the suggested equipment. The entire booklet is amply illustrated with drawings and pictures, and includes a list of references. (TES)

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EDUCATIONAL BUILDING DIGEST 19
UNESCO PRINCIPAL REGIONAL OFFICE FOR ASIA AND THE PACIFIC
BANGKOK, THAILAND

DESIGN IDEAS FOR PLAY SPACES FOR THREE TO SIX YEAR OLDS

Frolic

A.E.

The children were shouting together
And racing along the sands,
A glimmer of dancing shadows,
A dovelike flutter of hands.

The stars were shouting in heaven,
The sun was chasing the moon:
The game was the same as the children's,
They danced to the self-same tune.

The whole of the world was merry,
One joy from the vale to the height,
Where the blue woods of twilight encircled
The lovely lawns of the light.

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WHAT IS A PLAY SPACE?

- It is a joyful environment.
- There, children play everywhere, anywhere; and everything around them becomes a part of their play.
- It offers environmental stimuli where children learn by doing and learn through playing.
- It is a safe, healthy env[illegible]ent for play which builds strong bodies and develops emotional stability.

1. WHY PLAY SPACES ARE NEEDED

PLAY SPACES SUPPORT DEVELOPMENTAL NEEDS OF CHILDREN IN ALL DOMAINS:

1. Physical Development

Through active play, children develop:

- physical skills
- athletic skills
- stamina
- co-ordination
- elegance of performance
- safety skills
- survival skills

2. Cognitive Development

Children learn:

- about mass, conservation, volume through activities such as sand play;
- about weight and gravity through actions such as throwing, lifting or dropping;
- about series making, order and numbers through activities such as climbing steps;
- about time and space through activities such as running;
- to use intuition, imagination, logic and problem solving skills through games;

3. Social Development

Through group play, children learn:

- to share things;
- to cope with conflict situations;
- to trust and respect others;
- to share the joy of play.

Through supervised play, children learn:

- to follow directions;
- to communicate with adults and peers;
- collective and individual responsibility.

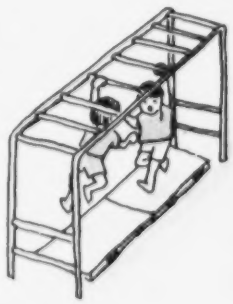
4. Emotional Development

Through active play, children develop:

- self-learning and self-reward;
- self- confidence and self-respect;
- a sense of adventure, accomplishment endurance, altertness and self control.

Through spontaneous play, children develop:

- a sense of freedom;
- ability to cope with personal challenges;
- ability to control agression.



Through structured play, children develop:

- improved attention spans and perseverance.

Various combinations of developmental learning in the four domains take place in the play space. For this reason, well designed and properly managed play spaces provide the child with a total learning experience.

PLAY SPACES CAN HELP CHILDREN COPE WITH CONTEMPORARY LIFE

Play spaces are needed to compensate in places where various changes are occuring which indirectly result in diminishing care for children from traditional sources. Developments which are having this effect are:

1. Social Change

- Decline of extended family units as a result of migration to cities.
- Reduction of grand-parents' care of children as a result of changing nuclear family structure.
- Successful population education leading to one or two child families where children are born only a few years apart. In these families the elder children are not old enough to take care of younger ones.
- Congestion of urban areas → no adequate space to play indoors or outdoors.

2. Economic Change

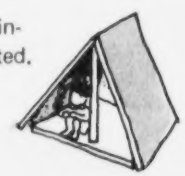
- Increase in the number of families with both parents working.

3. Spatial Change

- Construction sites
- Parking lanes
- Slums
- Roadside
- Overcrowded urban areas

are a [illegible] that children need to avoid [illegible] and to [illegible] them from hindering other activities.

2. HOW CAN PLAY SPACES HELP CHILDREN LEARN?

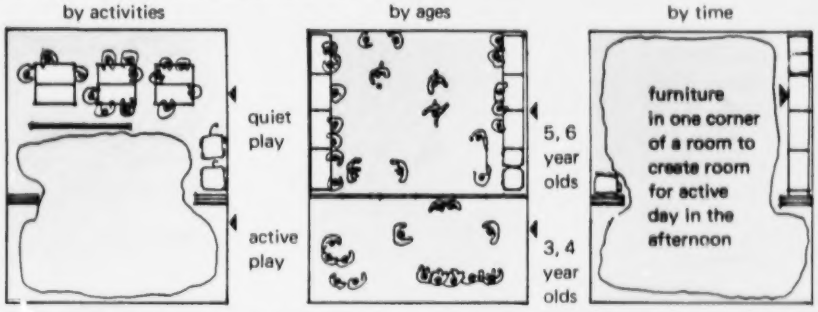
HOW CHILDREN LEARN	ACTION OF CHILDREN		CHARACTERISTICS OF GROWTH PRODUCING PLAY SPACE
- Active manipulation of objects, materials and equipment, leads to self-discovery of knowledge.	- Growth-producing: Child engaged in co-operative play with adults or other children. - Growth-inhibiting: Children moving from child to child or one play activity to another with little long lasting contact with other children or adults.		- Play equipment is grouped to form sets of movements that flow from one to the other. - Makes provision for individual pace of development for the child with opportunities for child to child co-operation rather than competition.
- Incorporating the active learning with spontaneous play in developmental sequences is a very effective learning strategy for the child.	- Growth-producing: Children making choices about what they will do. - Growth-inhibiting: Children being directed all the time by adults.		- The child's self motivation and feeling of competency and ability is not hampered. - Easy access to classroom. - Varied and rich play area with choice of equipment.
	- Growth-producing: Children using equipment as they are intended to be used. - Growth-inhibiting: Children using equipment in aggressive ways often aimed at another child.		- Clear instructions by teachers on how to use play equipment. - Offers graduated challenges, without being too difficult, for children of each age in the group served.
- Language, play, imagery, symbolization and trial and error manipulation are skills in the transformation from percept to concept.	- Growth-producing: Children being absorbed in the activities, and games and attending to what they play. - Growth-inhibiting: Children being inattentive, listless and easily distracted.		- Provides variety of stimuli through different shapes, colours and materials. - Combines active play equipment with restful ones such as a play house, platform or hiding corner. - Away from traffic, toilets or other distractions.
- The child alone has to make the leap from percept to concept. This is achieved through structured and unstructured play with other children and aids.	- Growth-producing: Children being usually considerate of other children and their play equipment. - Growth-inhibiting: Children often disrupting activities of others. Heavy reliance upon adult intervention in the maintenance of order and control.		- Child size play equipment. - Safe without continuous adult supervision. - Provides carefully designed sequences of learning activities suitably graded for different ages.
	- Growth-producing: Children helping to organize activities of the programme, assisting staff in arranging equipment, distributing materials and cleaning up when necessary. - Growth-inhibiting: Children being directed by adults to and from activities. Long period of random activities or waiting before being ready to play.		- Activities and equipment, self-encountered and self-selected by the child. - Child scale storage – close to play space, easy to use and to keep clean, children help themselves.

3. GENERAL CRITERIA FOR PLAY SPACES

ELEMENTS OF PLAY SPACE

1. Space for groups of play equipment	- A variety of play equipment is put together to give more play value than an isolated piece of equipment. - Placed near the buildings of associated activities to encourage maximum use.
2. Open space	- For group games and ball play.
3. Rest area	- Provides as many opportunities for rest as possible between active play for small children. It is a necessary part of play.
4. Storage	- For loose material and play equipment.

OPTIONS FOR SCHEDULING OF SPACE


by activities
by ages
by time
quiet play
active play
5, 6 year olds
3, 4 year olds
furniture in one corner of a room to create room for active day in the afternoon

Note: 36 children with 1.4 m^2 per child (minimum standard for outdoor and indoor play spaces)

BEHAVIOUR OF CHILDREN

- Pre-school children play in small groups of 2, 3 or 4.
- Less than 1.4 m^2 per child can lead to increased aggression and degeneration in general social behaviour in certain cultural situations.
- Small variations in amount of play space lead to few behavioural differences by children.

SAFETY RULES

For children:

- Concentrate and be careful while playing to avoid accidents.
- Know the proper way to handle and use equipment.
- Do not use broken equipment.
- Inform the teacher immediately when broken equipment is found.
- Reposition equipment misplaced by children while playing.
- It is not safe to push another child while playing.
- It is not safe to aim a ball or any object at another child's face.
- It is not safe to stack chairs precariously.

For teachers/adults:

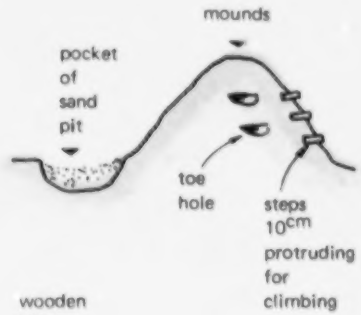
- Every morning before children come, check the condition of play equipment.
- Watch overall movement of children for safety while they play.
- Check every evening after children leave, so that each item of equipment is in the right place and in good condition.
- Do not keep a child waiting too long for a chance to play.
- While waiting for a turn to play, give some role to the child, such as cheering on others.
- Alternate active play with quiet play.
- Place play equipment in positions where children waiting for their turn can watch friends play.

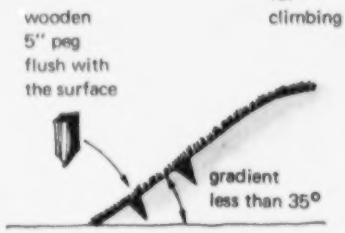
4. DESIGN IDEAS FOR PLAY SPACES

GROUND SHAPING

Provide miniature artificial contoured mounds, hills, and flat areas:

- Children like to climb, slide or roll down
- Take advantage of any natural differences of level in the site
- Hills provide good windshields and visual barriers
- Make hills of rubble, excavated soil from building works, roads, paths, etc.
- Flat areas are best for active games





SURFACES AND TEXTURES

Grass:

- This is the best material for children, if the area is large enough and well maintained
- For artificial hills, the gradient should be less than 35 degrees, and each turf of the bank should be pegged in position with 5 inch wooden pegs

Plain earth:

- A mixture of clay, sand and silt in proper proportion is more resilient than asphalt

Sea sand:

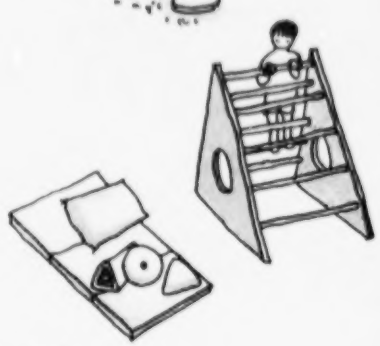
- Cleaned and free from oil
- Kept reasonably damp by watering

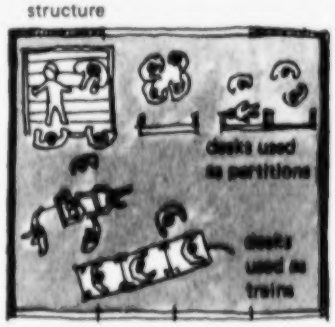
PLANTING

- Mix a variety of plants with colour, shape, smell, texture, to evoke senses
- No poisonous plants
- Avoid planting big trees with falling leaves along paths, sand pits or water play area

SMALL PLAY SPACES

- Gain vertical space by using climbing structures
- The surface below play structures should offer a cushioning effect to children who jump off. It also provides for less noise
  - indoors - mat, carpet
  - outdoors - sand, grass
- Provide soft furnishings such as pillows, mattresses and curtains to reduce noise in small crowded indoor play spaces
- Create free space for active play or games by cleaning up all the small items in the space and leaving only play structures, and big equipment. Then the following differences compared to undesigned arrangements may be observed.
  1. More physically active play
  2. More laughing
  3. More social play generally
  4. Imaginative use of large items, and equipment and sparking off of creative ideas





5. GENERAL CRITERIA FOR PLAY EQUIPMENT

LOCALLY AVAILABLE MATERIALS

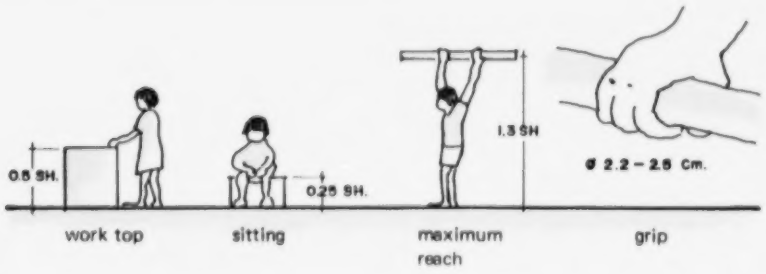
- Give low initial cost
- Reflect cultural traditions of the society
- Easily handled by those who make equipment
- Easier and less costly to repair

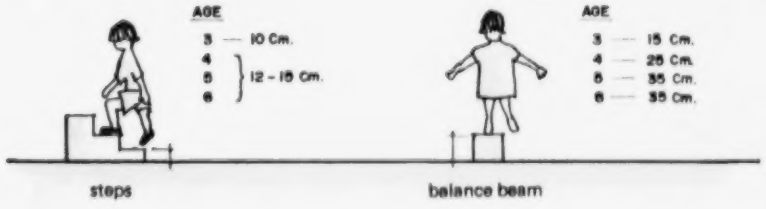
AMOUNT OF PLAY EQUIPMENT

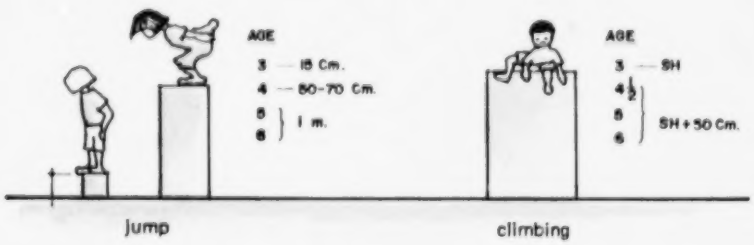
- Having several sets of equipment decreases the number of children using it and thus reduces conflicts and competition
- If equipment is not plentiful, this adverse situation can have positive results by helping children learn to wait and share if properly designed for

ANTHROPOMETRICS

Year of age	Standing Height (SH) of children			
	Japan		Korea (rural)	
	boy	girl	boy	girl
3	93	94	94	93
4	101	101	98	97
5	107	107	104	107
6	113	112	111	108







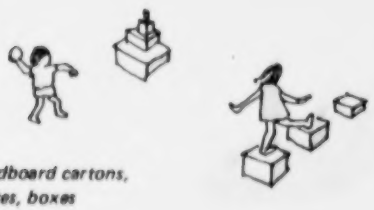
It is safer to place mats to jump on when heights are more than 1.5 m.

6. DESIGN IDEAS FOR PLAY EQUIPMENT

NO COST, LOW COST PLAY EQUIPMENT FOUND EVERYWHERE – IN HOMES AND FARMS

Ladders

Old clothes and scarves for costumes, bags pillows, broken pots and pans, buckets, cans, ropes, discarded brooms, wheels, springs hoses, broken radios, watches and parts, paper, scoops, shoes



Cardboard cartons, crates, boxes

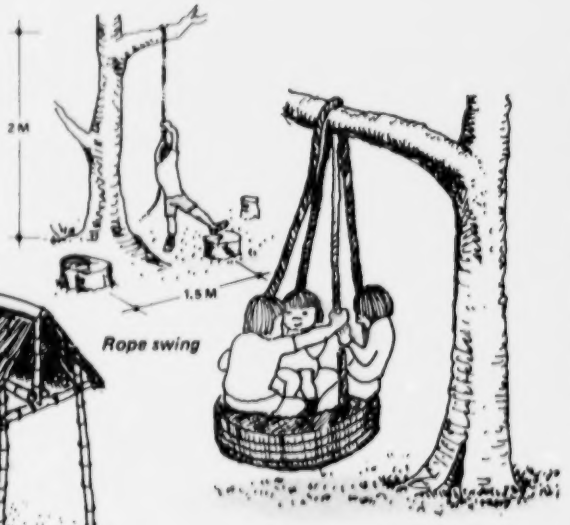
Tree branches, sea shells, feathers, leaves, pebbles, bamboo, sticks, flowers, cones, nuts

Bricks, blocks, wooden planks, broken baskets, tree trunks

bamboo

FIXED PLAY EQUIPMENT

Swings

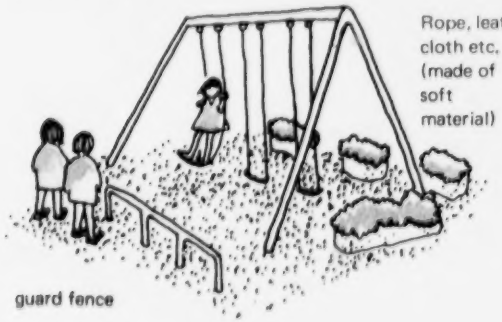


Rope swing

Tyre swing

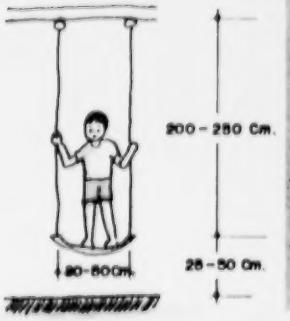
2 to 6 seater swing for small children

soft surface: sand clay, earth, mat



guard fence

Rope, leather cloth etc. (made of soft material)



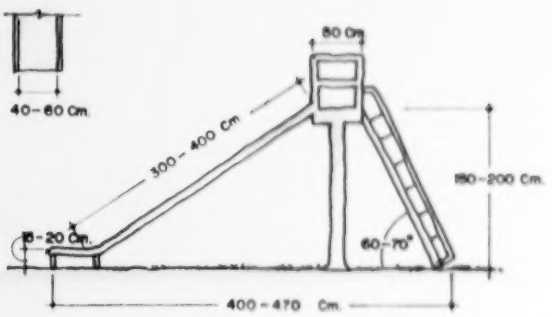
SAFETY ADVICE

- Periodically check the condition of the swing
- Clean and dry the the tyre swing inside and out when it gets wet, because a slippery surface is dangerous
- For new children, it is better to place mats under the swing
- It is not safe to ride a swing while carrying any objects
- Swing seats should be made of heavy rubber and be free of sharp corners or exposed bolts

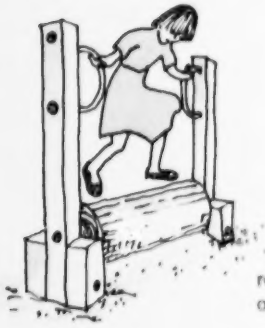
DESIGN IDEAS FOR PLAY EQUIPMENT (cont.)

FIXED PLAY EQUIPMENT (cont.)

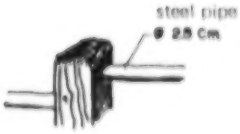
Slides



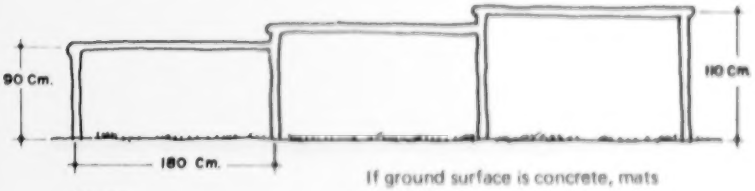
Rollers



round timbers on bearings



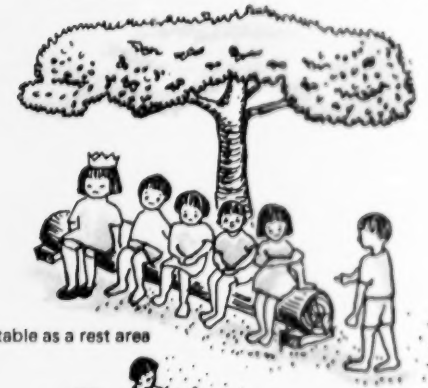
Horizontal bars



for two children

If ground surface is concrete, mats should be always be placed under the bar

Fixed logs



suitable as a rest area

for make-believe play

for balance

LET CHILDREN TALK AND LAUGH IN PLAY

SAFETY ADVICE

Slides

- When the platform height is more than 1.5 m, it is safer to locate the slide to land
- Edges of slide surface, especially the bottom of slide, for safety
- It is safe for children to push each other when on the slide or on the ground
- Keep the slide surface [illegible] in a
- Consider [illegible] hazard for child's hand

Horizontal bars

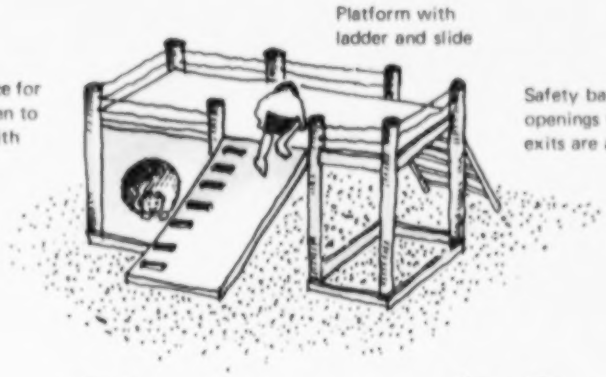
- When the bars [illegible] on concrete [illegible] dangerous
- It is [illegible] should always be placed on the horizontal bars
- Keep [illegible] bars [illegible]

Fixed logs

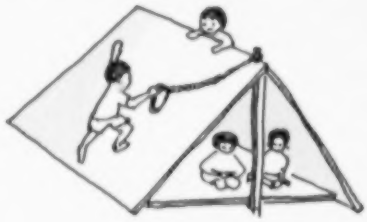
- [illegible]

FIXED PLAY EQUIPMENT (cont.)

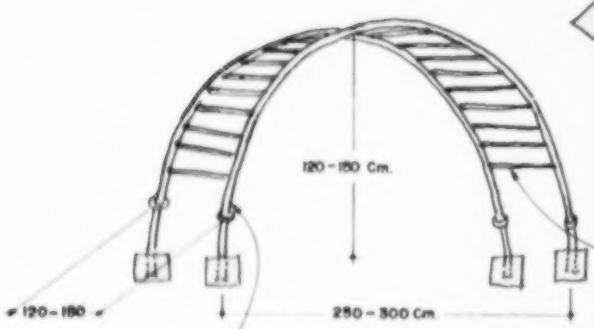
Climbing structures

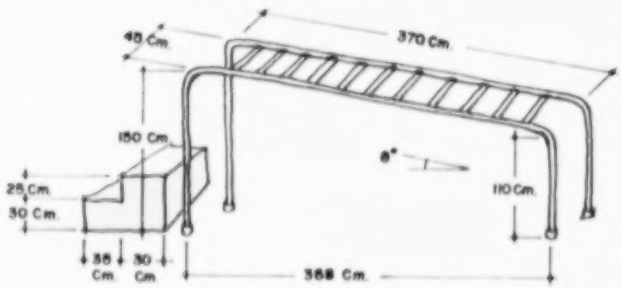

Platform with ladder and slide
Protected place for smaller children to rest or play with sand
Safety barrier with openings where exits are allowed

Platform, with various options

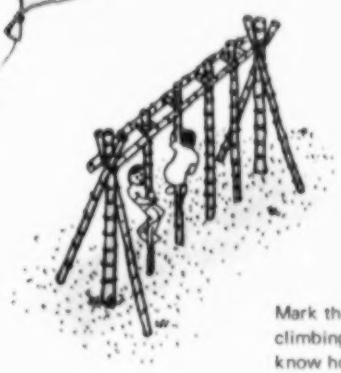


Inclined plane

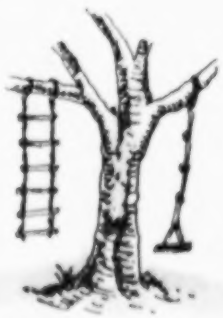




Overhead ladder



Mark the height every 10 cm on the climbing pole, so that children will know how high they have climbed



Climbing pole (for children 5 years or more)

Climbing ladder

SAFETY ADVICE

Climbing structures

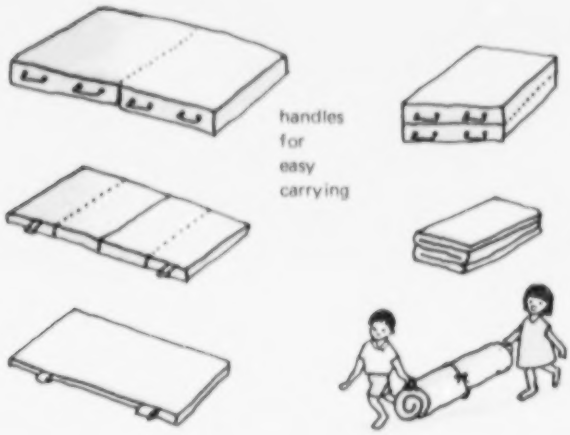
- Take off shoes when climbing
- No loose strings or ties on children's clothing when playing
- It is possible to push or pull other children while structure dry or wet
- It is not safe to jump down from a high place
- If the height is more than 1 m, always put mats on the ground to jump on
- Use galvanized pipes otherwise, paint once every year or as soon as rust appears
- Keep wood smooth to remove splinters

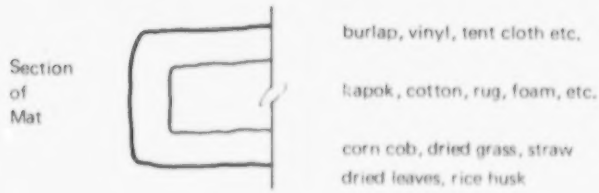
Supervision

- A teacher should be nearby during frightening situations
- Assist children who do not know how to come down when descending the climbing pole
- Help children who do not know how to climb the pole by putting your hands under

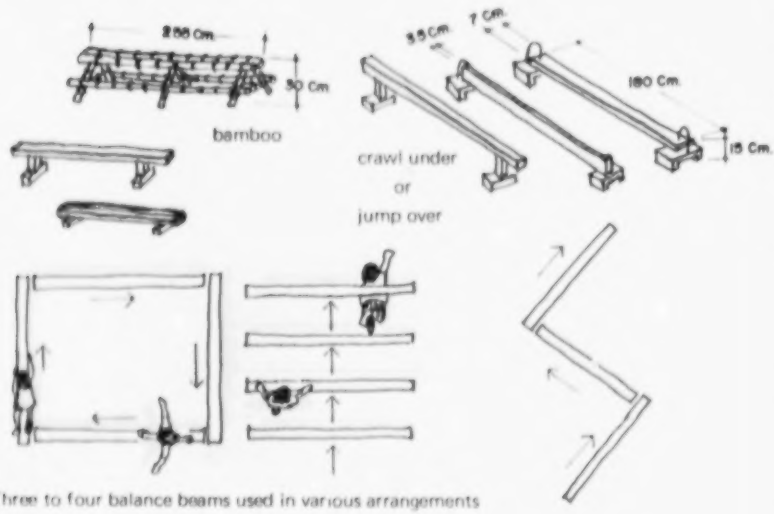
LARGE MOVABLE PLAY EQUIPMENT

Mats



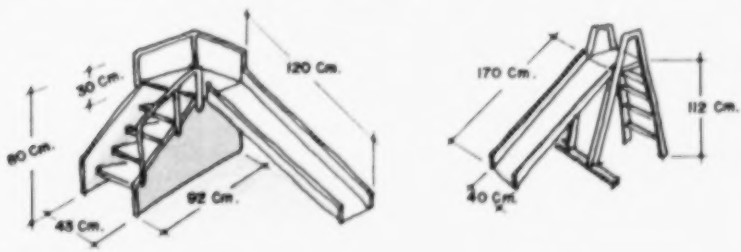


Balance Beams



Three to four balance beams used in various arrangements

Slides



for 1-5 year-old children

for 3-6 year-old children

- Construction in sections permits mobility
- Angular arrangement of sections makes use of room corners

SAFETY ADVICE

Mats

- Keep equipment as light weight as possible so that children can carry and set up by themselves
- Remove the mat in the rainy season as soon as possible
- Dust, air and place under the sun to keep mat dry

Balance beams and slides

- Try playing similar games using sticks or rope placed on the ground before using balance
- It is not safe to touch or push a child who is walking on a balance beam
- Keep bamboo and wood free of splinters.

LET CHILDREN TALK AND LAUGH IN PLAY

LARGE MOVABLE PLAY EQUIPMENT (cont.)

Cars

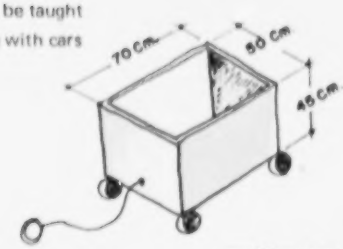
wooden car

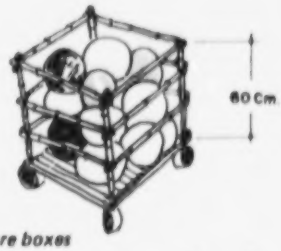
train with large wheels

3-wheel scooter

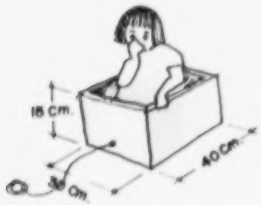
traffic rules can be taught through playing with cars

Carts

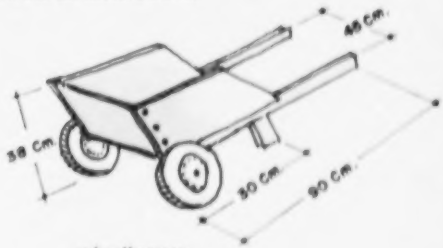




multi use carts/store boxes

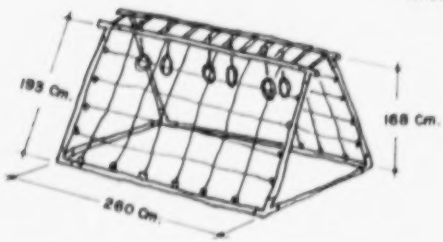


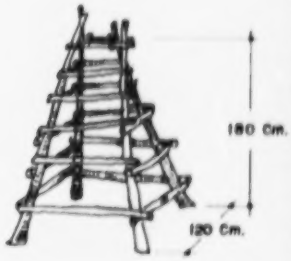
box with runners



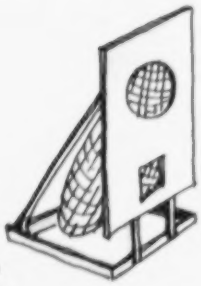
wheelbarrow

Climbing structures



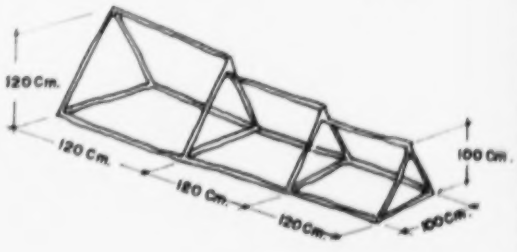


Ball nets



net bag to catch balls

Horizontal bars

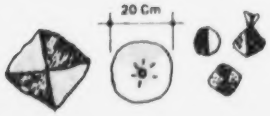


DESIGN IDEAS FOR PLAY EQUIPMENT (cont.)

SMALL MOVABLE PLAY EQUIPMENT

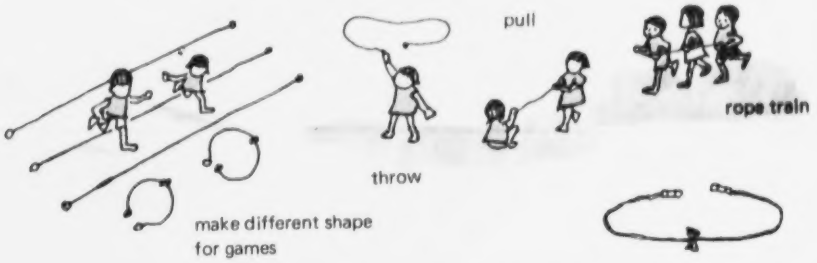
Balls Made from cloth, rubber, bamboo, plastic etc. as colourful as possible, light weight

Bean bags



colourful cloth bags with beans, pebbles or dry seeds inside

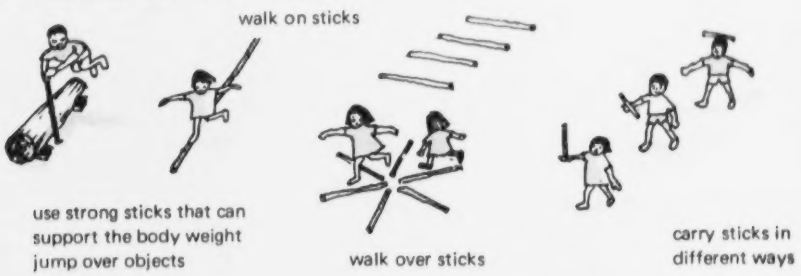
Ropes 2-3 m (short rope) and 4-5 m (long rope) made from thick straw, vinyl, hemp or rubber



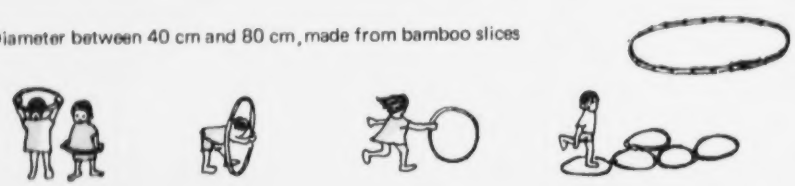
Mark the middle of each rope with colour to pick up easily from a pile of ropes

Sticks 30-50 cm (short stick) and 1-1.8 m (long stick) made from bamboo or wood

smooth surfaces, smooth edges, cover with cloth to prevent noise when dropped on floor


walk on sticks
use strong sticks that can support the body weight
jump over objects
walk over sticks
carry sticks in different ways

Hoops Diameter between 40 cm and 80 cm, made from bamboo slices



Flags various bases for flag pole

DESIGN IDEAS FOR PLAY EQUIPMENT (cont.)

SAND/WATER/PLAY WITHOUT EQUIPMENT

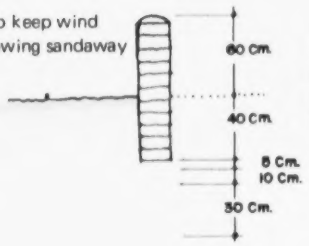
Sand

outdoors

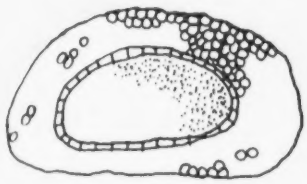
round the edge

cobbles provide rough scuffing surface to remove sand from shoes

barrier to keep wind from blowing sandaway



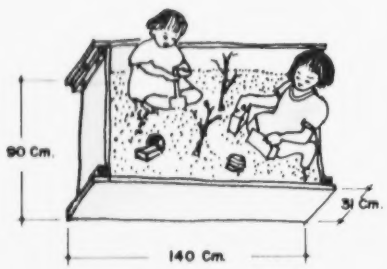
sand
pebbles
stones
broken brick



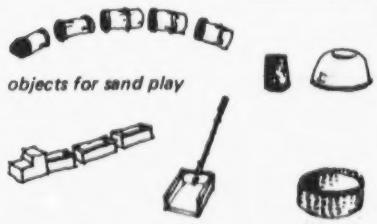
indoors

plastic tunnel

plastic containers used as moulds



objects for sand play



wooden scoops and train

bamboo strainer

Water

outdoors

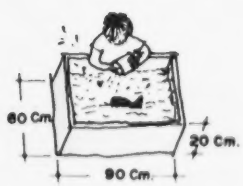
- Endless possibilities for play

sailing boat

measuring

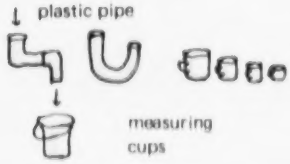
splashing

indoors



objects for water play

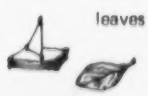
plastic pipe



measuring cups

wood

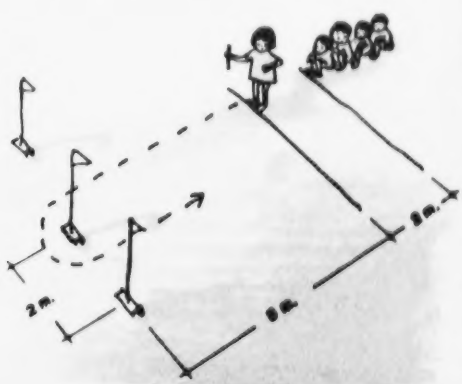
leaves



various boats

Play without play equipment

1. Pretending
2. Rhythm
3. Run and catch
4. Run and touch
5. Run a race



LET CHILDREN TALK AND LAUGH IN PLAY

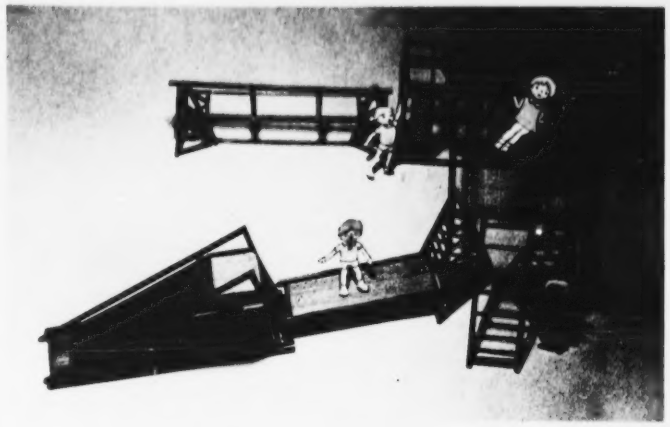
SAFETY ADVICE

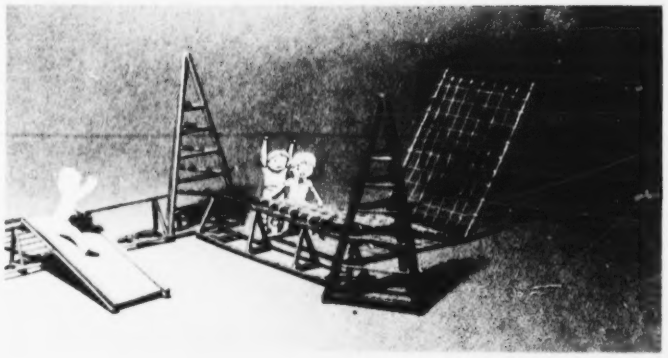
PLAY EQUIPMENT SYSTEMS WITH MANY OPTIONS

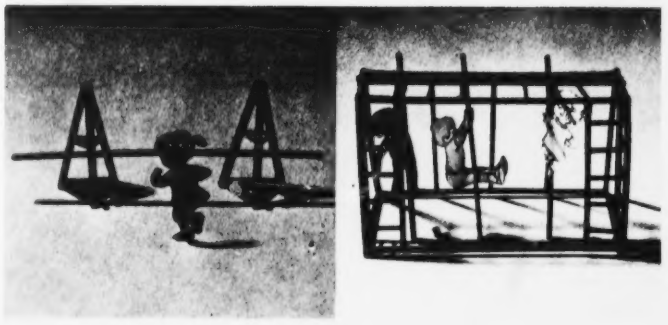
Integrated system of play equipment

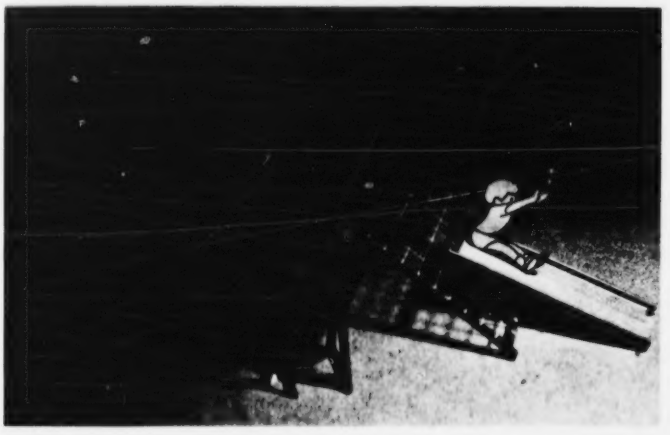
- Offer graduated challenge
- Enable children to develop at their own pace
- Challenges children to find alternative ways to use equipment
- Provides a variety of approaches to the use of equipment
- Stimulates a longer attention span and encourages more creative play

Note: These systems should not be too difficult to use, otherwise they are frustrating for children.









Basic support elements				
Optional elements	*Uses*			
	Linking	*Access*	*Exit*	*Rest*
Ladder	○	○	○	
Bridge	○			○
Platform	○			○
Ramp		○	○	
Stairs		○	○	
Net	○	○	○	○
Slide			○	
Firemen's Pole			○	
Three dimensional space				○

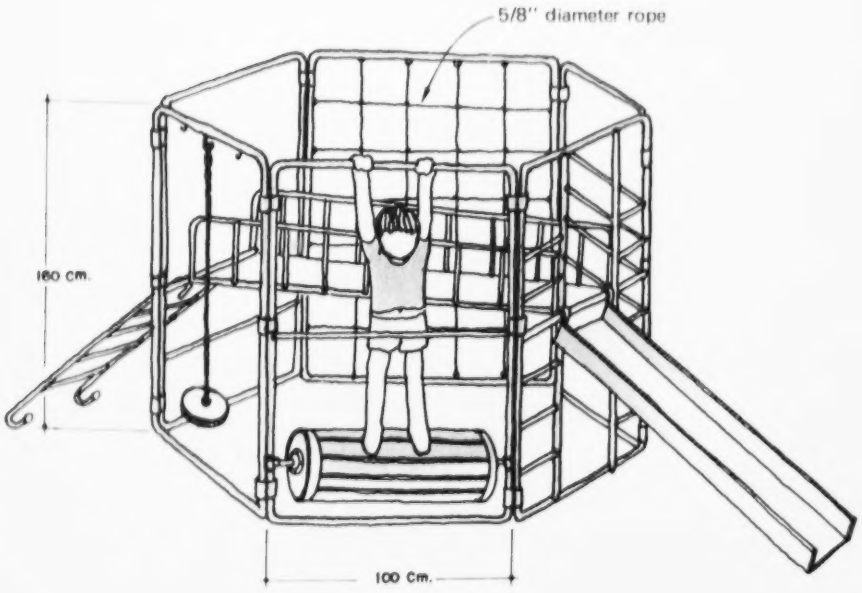
DESIGN IDEAS FOR PLAY EQUIPMENT (cont.)

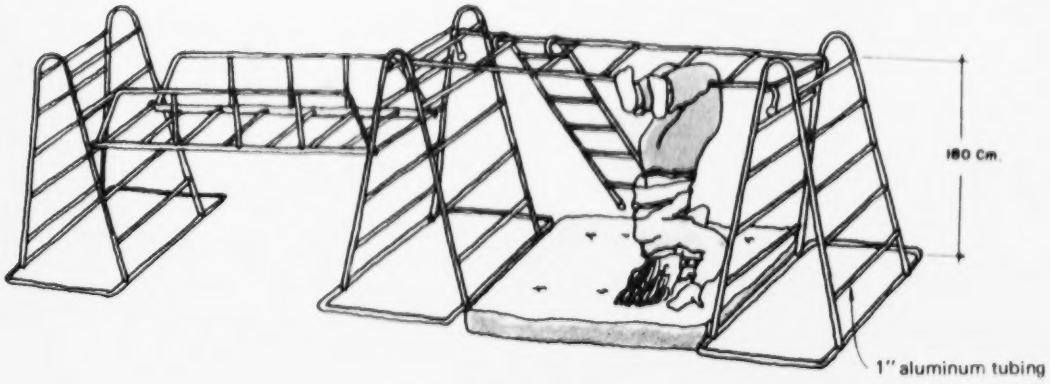
PLAY EQUIPMENT SYSTEMS WITH MANY OPTIONS (cont.)

For 3–4 year-old children

Can be folded and stored away
Many possibility of play activities – crawling, climbing, resting

For 5-6 year-old children





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